REMARKS

The Office Action dated June 15, 2005 has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

Claims 1, 24, 25, 26, 49, 50 and 51 have been amended to more particularly point out and distinctly claim the subject matter of the invention. No new matter has been added and no new issues are raised which require further consideration or search. Claims 1-67 are currently pending in the application and are respectfully submitted for consideration.

Applicants wish to thank the Examiner for the courtesy extended in conducting the Interview on August 31, 2005. As discussed during the interview, Applicants submit that the present claims recite subject matter which is neither disclosed nor suggested by the cited prior art.

Claims 1, 6, 17, 25, 26, and 50-51 were rejected under 35 U.S.C. §102(e) as being anticipated by Ramankutty (U.S. Patent No. 6,502,163). The above rejection is respectfully traversed for the reasons which follow.

Claim 1, upon which claims 2-23 are dependent, recites a method for classifying a plurality of data flows in a router. The method includes the step of partitioning a ternary content addressable memory (TCAM) into at least a first partition and a second partition. The first partition includes indices having highest priority ranging from a lowest index to a partition index and the second partition includes indices having lowest priority ranging

from a highest index to the partition index. The method further includes the steps of loading one or more first flow TCAM entries of a first of the plurality of data flows into the first partition in a predetermined order, loading one or more second TCAM entries of a second of the plurality of data flows into the second partition in a predetermined order, setting bit values of a corresponding mask for each of the first TCAM entries and the second TCAM entries such that bits of the respective first TCAM entries and the second TCAM entries are individually masked by the masks, and comparing a prefix comprising predetermined packet header information of an incoming packet to the loaded one or more first TCAM entries and one or more second TCAM entries such that a matching said one or more first TCAM entries subsumes any matching said one or more second TCAM entries.

Claim 25 recites a method for classifying a plurality of data flows in a router. The method includes the step of partitioning a ternary content addressable memory (TCAM) into at least a first partition and a second partition. The first partition includes indices having highest priority ranging from a lowest index to a partition index and the second partition includes indices having lowest priority ranging from a highest index to the partition index. The method further includes the steps of loading one or more first flow TCAM entries of a first of the plurality of data flows into the first partition in a predetermined order, loading one or more second flow TCAM entries of a second of the plurality of data flows into the second partition in a predetermined order, and setting bit values of a corresponding mask for each of the first TCAM entries and the second TCAM

entries such that bits of the respective first TCAM entries and the second TCAM entries are individually masked by the masks. The method also includes the steps of comparing a prefix comprising predetermined packet header information of an incoming packet to the loaded one or more first TCAM entries and one or more second TCAM entries such that a matching said one or more first TCAM entries subsumes any matching said one or more second TCAM entries, maintaining a flow index space having entries corresponding to the TCAM; and determining the predetermined order of the first TCAM entries and the predetermined order of the second TCAM entries in the flow index space before the steps of loading the one or more first TCAM entries.

Claim 26, upon which claims 27-48 are dependent, recites a system for classifying a plurality of data flows in a router. The system includes means for partitioning a ternary content addressable memory (TCAM) into at least a first partition and a second partition. The first partition includes indices having highest priority ranging from a lowest index to a partition index and the second partition includes indices having lowest priority ranging from a highest index to the partition index. The system also includes means for loading one or more first flow TCAM entries of a first of the plurality of data flows into the first partition in a predetermined order, means for loading one or more second flow TCAM entries of a second of the plurality of data flows into the second partition in a predetermined order, means for setting bit values of a corresponding mask for each of the first TCAM entries and the second TCAM entries such that bits of the respective first TCAM entries and said second TCAM entries are individually masked by the masks, and

means for comparing a prefix comprising packet header information of an incoming packet to predetermined said loaded one or more first TCAM entries and one or more second TCAM entries. Matching the one or more first TCAM entries subsumes matching the one or more second TCAM entries.

Claim 50 recites a system for classifying a plurality of data flows in a router. The system includes means for partitioning a ternary content addressable memory (TCAM) into at least a first partition and a second partition. The first partition includes indices having highest priority ranging from a lowest index to a partition index and the second partition includes indices having lowest priority ranging from a highest index to the partition index. The method further includes means for loading one or more first flow TCAM entries of a first of the plurality of data flows into the first partition in a predetermined order, means for loading one or more second flow TCAM entries of a second of the plurality of data flows into the second partition in a predetermined order, means for setting bit values of a corresponding mask for each of the first TCAM entries and the second TCAM entries such that bits of the respective first TCAM entries and the second TCAM entries are individually masked by the masks, means for comparing a prefix comprising predetermined packet header information of an incoming packet to the loaded one or more first TCAM entries and one or more second TCAM entries such that a matching said one or more first TCAM entries subsumes an matching said one or more second TCAM entries, means for maintaining a flow index space having entries corresponding to said TCAM, and means for determining the predetermined order of the

first TCAM entries and said predetermined order of the second TCAM entries in the flow index space before the steps of loading the one or more first TCAM entries.

Claim 51, upon which claims 52-67 are dependent, recites an apparatus for classifying a plurality of data flows in a routing system. The apparatus includes a ternary content addressable memory (TCAM), and a partitioning algorithm for partitioning the TCAM into at least a first partition and a second partition. The first partition includes indices having highest priority ranging from a lowest index to a partition index and the second partition includes indices having lowest priority ranging from a highest index to the partition index. The apparatus further includes a loading algorithm for selecting a respective mask value to structure one or more first flow TCAM entries of a first of the data flows and one or more second flow TCAM entries and the respective mask values into the second partition, and a search algorithm for performing an associative comparison of a prefix comprising predetermined packet header information of an incoming packet to the loaded one or more first flow TCAM entries and one or more second flow TCAM entries of a first of the plurality of data flows into the first partition in a predetermined order such that a matching said one or more first TCAM entries subsumes an matching said one or more second TCAM entries.

Therefore, the claimed invention is directed, in part, to a system and method for supporting and classifying a plurality of data flows in a router using a TCAM such that the number of accesses to the TCAM is optimized thereby improving the efficiency of updating and subsequent look-up. In order to achieve this objective, the claimed

invention partitions the TCAM into at least two partitions in which the first partition includes indices having a higher priority and the second partition includes indices having a lower priority. As an example, multiple protocol label switching (MPLS) flows and IP-virtual private network (IPVPN) flows may be added to the first partition and, therefore, given a higher priority, while policy based routing flows may be added to the second partition with a lower priority.

As will be discussed below, Ramankutty fails to disclose or suggest all of the elements of the claims, and therefore fails to provide the features and advantages discussed above.

Ramankutty discloses a method and apparatus for ordering entries in a ternary content addressable memory (CAM) 100. The CAM has a number of entries arranged into groups 108-1...108-5. CAM data values of the same length are stored in each group. When a new CAM data value is added to the CAM, the new data value is stored into one of the groups according to the prefix length. A prefix length translator 104 receives prefix length values and translates them into corresponding CAM cell array addresses (CAM_ADD). A prefix value and corresponding data value is applied to the CAM and the data value is written into the group corresponding to its prefix length. A table update operation can be performed without having to reorder entries in the ternary CAM 100.

Applicants respectfully submit that Ramankutty does not disclose or suggest all of the elements of independent claims 1, 25, 26, 50 and 51. Specifically, Applicants respectfully submit that Ramankutty does not disclose or suggest partitioning a TCAM

into a first partition with a highest priority and a second partition with a lowest priority, loading first flow TCAM entries into the first partition in a predetermined order, and loading the second flow TCAM entries into the second partition in a predetermined order, as recited in the present claims. According to the present invention, a flow is a set of data packets that obey a rule or policy identified from the context of the packet header fields of the data packets (Specification, page 6, lines 20-21). In addition, flows are assigned to the first partition or the second partition depending upon a desired priority for the type of flow (Specification, page 8, lines 10-11). Thus, for example, if MPLS or IPVPN flows are considered highest priority then they would be part of the first flow and added to the first partition which has highest priority. Applicants respectfully submit that Ramankutty fails to disclose or suggest such a classification method or system, since Ramankutty does not order, classify, or prioritize TCAM entries based on the flow.

Ramankutty only discloses that the TCAM can be arranged into groups and the various groups 108-1 to 108-5 can store data values having a predetermined prefix length. In figure 1 of Ramankutty, group 108-1 stores data values having a prefix length "V," group 108-2 stores data values having a prefix length "W," group 108-3 stores data values having a prefix length "X," group 108-4 stores data values having a prefix length "Y," and group 108-5 stores data values having a prefix length "Z." The groups can be arranged in order from longest prefix length to shortest prefix length (Ramankutty, Column 6, lines 10-30). Ramankutty, however, does not disclose or suggest prioritizing the TCAM entries based on the type of flow. As such, Applicants respectfully submit

that Ramankutty fails to disclose or suggest all of the elements of claims 1, 25, 26, 50 and 51.

In addition, Ramankutty does not disclose or suggest loading the TCAM entries in a predetermined order. Ramankutty does disclose, as mentioned above, arranging the data values according to the prefix length. It does not, however, make any mention of loading the entries in a predetermined order.

Claims 6, 17, 31, 42, 54, and 61 are dependent upon claims 1, 26, and 51, respectively. As such, claims 6, 17, 31, 42, 54, and 61 should also be found allowable for at least their dependence upon claims 1, 26, and 51, and for the specific limitations recited therein.

Claims 24 and 49 were rejected under 35 U.S.C. §103(a) as being unpatentable over Ramankutty in view of Pereira (U.S. Patent No. 6,324,087) and Hawkinson (U.S. Pub. No. 2002/0078040, hereinafter Hawkinson '040). The Office Action took the position that Ramankutty discloses all of the limitations of the claims, with the exception of the first plurality of data flows being MPLS or IP-VPN flows and the second plurality of data flows being policy based routing flows. The Office Action then relies upon Pereira and Hawkins as allegedly curing these deficiencies in Ramankutty. The rejection is respectfully traversed for the following reasons.

Claim 24 recites a method for classifying a plurality of data flows in a router. The method includes the step of partitioning a ternary content addressable memory (TCAM) into at least a first partition and a second partition. The first partition includes indices

having highest priority ranging from a lowest index to a partition index and the second partition includes indices having lowest priority ranging from a highest index to the partition index. The method further includes the steps of loading one or more first flow TCAM entries of a first of the plurality of data flows into the first partition in a predetermined order, loading one or more second flow TCAM entries of a second of the plurality of data flows into the second partition in a predetermined order, setting bit values of a corresponding mask for each of the first TCAM entries and the second TCAM entries such that bits of the respective first TCAM entries and the second TCAM entries are individually masked by the masks, and comparing a prefix comprising predetermined packet header information of an incoming packet to the loaded one or more first TCAM entries and one or more second TCAM entries such that a matching said one or more first TCAM entries subsumes any matching said one or more second TCAM entries. The first plurality of data flows are MPLS or IP-VPN flows and the second plurality of data flows are policy based routing flows.

Claim 49 recites a system for classifying a plurality of data flows in a router. The system includes means for partitioning a ternary content addressable memory (TCAM) into at least a first partition and a second partition. The first partition includes indices having highest priority ranging from a lowest index to a partition index and the second partition includes indices having lowest priority ranging from a highest index to the partition index. The system further includes means for loading one or more first flow TCAM entries of a first of the plurality of data flows into the first partition in a

predetermined order, means for loading one or more second flow TCAM entries of a second of the plurality of data flows into the second partition in a predetermined order, means for setting bit values of a corresponding mask for each of the first TCAM entries and the second TCAM entries such that bits of the respective first TCAM entries and the second TCAM entries are individually masked by the masks, and means for comparing a prefix comprising predetermined packet header information of an incoming packet to the loaded one or more first TCAM entries and one or more second TCAM entries such that a matching said one or more first TCAM entries subsumes any matching said one or more second TCAM entries. The first plurality of data flows are MPLS or IP-VPN flows and the second plurality of data flows are policy based routing flows.

As will be discussed below, the combination of Ramankutty, Pereira, and Hawkinson '040 fails to disclose or suggest all of the elements of the claims, and therefore fails to provide the features discussed above.

Pereira discloses a method and apparatus for partitioning a content addressable memory device. A CAM device having a plurality of CAM blocks is divided into a number of individually searchable partitions, where each partition may include one or more CAM blocks of the CAM device. Each CAM block is connected to a block select circuit that stores a class code indicating what class or type of data is stored in the block. During compare operations between a comparand word and data stored in the CAM device, a search code is provided to the block select circuits. Each block select circuit

compares the search code with its class code and, in response thereto, selectively enables or disables the corresponding CAM block for the compare operation.

Hawkinson '040 discloses an apparatus and method for providing a binary range tree search. The method includes defining a first node having a first range, and a second node having a second range that is either less than or greater than the first range. Each of the first and second ranges has a plurality of range values, and each of the range values has data associated therewith. Information having a value is then received. The method determines if the value is located in the first node, if so, data associated with the value is retrieved. Otherwise, the method determines if the value is located in the second node. Data associated with the value is retrieved if the value is located in the second node.

Claims 24 and 49 of the present invention also contain the limitation that the first partition includes indices having highest priority and the second partition includes indices having lowest priority, and that the first flow TCAM entries are loaded into the first partition while the second flow TCAM entries are loaded into the second partition. As discussed above, Ramankutty does not disclose or suggest such a limitation. Additionally, Pereira and Hawkins fail to cure this deficiency in Ramankutty as they also fail to disclose this element of the claims. Therefore, Applicants respectfully assert that the combination of Ramankutty, Pereira and Hawkins fails to disclose or suggest all of the elements of claims 24 and 49.

Claims 2, 27, and 52 were rejected under 35 U.S.C. §103(a) as being unpatentable over Ramankutty in view of Pereira. The Office Action took the position that

Ramankutty discloses all of the limitations of the claims, with the exception of the first plurality of data flows being MPLS or IP-VPN flows. The Office Action then relies upon Pereira as allegedly disclosing this element of the claims. The rejection is respectfully traversed for the following reasons.

Claims 2, 27 and 52 are dependent upon claims 1, 26 and 51, respectively. As indicated above, both Ramankutty and Pereira fail to disclose or suggest all of the elements of claims 1, 26 and 51. As such, Applicants submit that claims 2, 27 and 52 should be found allowable for at least their dependence upon claims 1, 26 and 51, and for the specific limitations recited therein.

Claims 3-5, 18, 20, 28-30, 43, 45, 53, 62, and 64 were rejected under 35 U.S.C. §103(a) as being unpatentable over Ramankutty in view of Hawkinson (U.S. Patent No. 6,295,532, hereinafter Hawkinson '532). The Office Action took the position that Ramankutty discloses all of the limitations of the claims, with the exception of the second plurality of data flows being policy based routing flows. The Examiner then relies upon Hawkinson '532 as allegedly curing these deficiencies in Ramankutty. The rejection is respectfully traversed for the following reasons.

Hawkinson '532 discloses a method and apparatus for classifying information received by a communication system. A first parameter having a first parameter range and a second parameter range, and a second parameter having a third parameter range and a fourth parameter range, are defined. A first class having one of the first parameter and the second parameter ranges, and one of the third and the fourth parameter ranges,

are also defined. A second class having another one of the first parameter and the second parameter ranges, and another one of the third and the fourth parameter ranges, is also defined. Information having a first parameter value and a second parameter value is received. The method determines if the first parameter value is within one of the first and second parameter ranges and if the second parameter value is within one of the third and fourth parameter ranges is made. If so, the information is classified into one of the first and second classes based on the first parameter value and the second parameter value, otherwise the information is classified as a default class. An output value representative of the classification is then generated.

Claims 3-5, 18, 20, 28-30, 43, 45, 53, 62, and 64 are dependent upon claims 1, 26 and 51, respectively. In addition, Hawkinson '532 fails to cure the deficiencies in Ramankutty as discussed above with respect to claims 1, 26 and 51. Therefore, Applicants submit that claims 3-5, 18, 20, 28-30, 43, 45, 53, 62, and 64 should be found allowable for at least their dependence upon claims 1, 26 and 51, and for the specific limitations recited therein.

Claims 7, 32, and 55 were rejected under 35 U.S.C. §103(a) as being unpatentable over Ramankutty in view of Pereira and further in view of Kaiserwerth (U.S. Patent No. 5,684,954). The Office Action took the position that Ramankutty and Pereira disclose all of the limitations of the claims, with the exception of the MPLS or IP-VPN flows being classified by connection index (CIX) and destination address (DA), CIX only or DA only. The Office Action then relies upon Kaiserwerth as allegedly curing these

deficiencies in Ramankutty and Pereira. The rejection is respectfully traversed for the following reasons.

Kaiserwerth discloses a method and apparatus for processing various fields of a protocol header preceding a data stream to provide a unique connection identifier for processing the data stream. More specifically, Kaiserwerth discloses scanning the data stream to detect and read protocol-type information of a first protocol in the protocol header. The protocol information in fields of the first and second protocol of the protocol header is read. The protocol-type information and the protocol information is applied to an input of a content addressable memory (CAM). The protocol-type information and the protocol information are compared with information stored in the CAM and the CAM address containing identical information is provided at an output of the CAM. A connection identifier is generated by connecting the CAM address provided in the output of the CAM.

Claims 7, 32 and 55 are dependent upon claims 1, 26 and 51, respectively. As discussed above, both Ramankutty and Pereira fail to disclose or suggest all of the elements of claims 1, 26 and 51. Additionally, Kaiserwerth also fails to cure theses deficiencies in Ramankutty and Pereira. Thus, Applicants respectfully submit that claims 7, 32 and 55 should be found allowable for at least their dependence upon claims 1, 26 and 51, and for the specific limitations recited therein.

Claims 14-15, 35, 40, and 58-59 were rejected under 35 U.S.C. §103(a) as being unpatentable over Ramankutty, Pereira, and Kaiserwerth further in view of Brodnik (U.S.

Patent No. 6,266,706). The Office Action took the position that Ramankutty, Pereira and Kaiserwerth disclose all of the limitations of the claims, with the exception of assigning the flows classified by CIX and CIX only to a CIX prefix tree. The Office Action then relies upon Brodnik as allegedly curing this deficiency in Ramankutty, Pereira and Kaiserwerth. The rejection is respectfully traversed for the following reasons.

Brodnik discloses a method of IP routing lookup in a routing table to determine where IP datagrams are to be forwarded. The routing table includes entries of arbitrary length prefixes with associated next-hop information in a next-hop table. The method includes the steps of storing a representation of the routing table in the form of a complete prefix tree, storing a representation of a bit vector, storing an array of pointers, dividing the bit vector into bit-masks of a certain length, storing a maptable including a representation of the bit-masks that are possible, storing an array of code words encoding a row index into the maptable and pointer offset, and storing an array of base addresses. The method further includes accessing the code word, maptable entry, base address, and pointer at a certain location.

Claims 14-15, 35, 40, and 58-59 are dependent upon claims 1, 26 and 51, respectively. As mentioned above, the combination of Ramankutty, Pereira, and Kaiserwerth fails to disclose or suggest all of the elements of claims 1, 26 and 51. Furthermore, Brodnik also fails to cure these deficiencies in Ramankutty, Pereira, and Kaiserwerth. Consequently, Applicants submit that claims 14-15, 35, 40, and 58-59

should be found allowable for at least their dependence upon claims 1, 26 and 51, and for the specific limitations recited therein.

Claims 16, 41, and 60 were rejected under 35 U.S.C. §103(a) as being unpatentable over Ramankutty, Pereira and Kaiserwerth in further view of Patra (U.S. Patent No. 6,516,383). The Office Action took the position that Ramankutty, Pereira and Kaiserwerth disclose all of the limitations of the claims, with the exception of removing a flow in the TCAM by freeing up a corresponding entry in the flow index space and invalidating a corresponding TCAM entry. The Office Action then relies upon Patra as allegedly curing this deficiency in Ramankutty, Pereira and Kaiserwerth. The rejection is respectfully traversed for the following reasons.

Patra discloses a method and system for efficient location of free entries for TCAM inserts. The free entries are compacted into a contiguous subregion within each region. The entire memory is pre-filled with a set of hole codes that each uniquely identify the holes in each region. A conventional memory write is performed to load routing data into the memory. When entries need to be deleted, they are replaced by writing in the region-unique hole code. In order to insert an entry, the host processor searches for the desired region-unique hole and writes the data to its location.

Claims 16, 41, and 60 are dependent upon claims 1, 26 and 51, respectively. As discussed above, Ramankutty, Pereira and Kaiserwerth, whether viewed alone or in combination, fail to disclose or suggest all of the elements of claims 1, 26 and 51. In addition, Patra fails to cure these deficiencies in Ramankutty, Pereira and Kaiserwerth.

As such, Applicants respectfully submit that claims 16, 41, and 60 should be allowable for at least their dependence upon claims 1, 26 and 51, and for the specific limitations recited therein.

Claims 21, 46, and 62 were rejected under 35 U.S.C. §103(a) as being unpatentable over Ramankutty and Hawkinson '532 in view of Patra and Washburn (U.S. Patent No. 6,081,440). The Office Action took the position that Ramankutty, Hawkinson '532 and Patra disclose all of the limitations of the claims, with the exception of compacting the flows in the TCAM by moving each remaining TCAM entry up by one index. The Office Action then relies upon Washburn as allegedly curing this deficiency in Ramankutty, Hawkinson '532 and Patra. The rejection is respectfully traversed for the following reasons.

Washburn discloses a ternary content addressable memory (CAM) having fast insertion and deletion of data values. The CAM includes an array of CAM cells, each of which includes a data value register and a mask value register. To enable parallel shifting between a CAM cell in one row with a corresponding CAM cell in a higher row, each data value register and mask value register includes an upper data input (UD) coupled the output of a CAM cell in the higher row. To enable parallel shifting between a CAM cell in one row with a corresponding CAM cell in a lower row, each data value register and mask value register includes a lower data input (LD) coupled the output of a CAM cell in the lower row.

Claims 21, 46, and 62 are dependent upon claims 1, 26 and 51, respectively. As mentioned above, Ramankutty, Hawkinson '532, and Patra fail to disclose or suggest all of the elements of claims 1, 26 and 51. Moreover, Washburn fails to cure the deficiencies in Ramankutty, Hawkinson '532, and Patra with respect to claims 1, 26 and 51. Therefore, Applicants respectfully assert that claims 21, 46, and 62 should be found allowable for at least their dependence upon claims 1, 26 and 51, and for the specific limitations recited therein.

Claims 19, 22, 44, 47, 63, and 66 were rejected under 35 U.S.C. §103(a) as being unpatentable over Ramankutty and Hawkinson '532 further in view of Kaiserwerth. The Office Action took the position that Ramankutty and Hawkinson '532 disclose all of the limitations of the claims, with the exception of mapping the ACL flow to multiple flows in the TCAM wherein the mask for each of the multiple flows covers a portion of the range of source or destination ports for optimally determining a number of flows to cover the portion of the range. The Office Action then cites Kaiserwerth as allegedly disclosing this element of the claims. The rejection is respectfully traversed for the following reasons.

Claims 19, 22, 44, 47, 63, and 66 are dependent upon claims 1, 26 and 51, respectively. Additionally, the combination of Ramankutty, Hawkinson '532, and Kaiserwerth fails to disclose or suggest all of the elements of claims 1, 26 and 51. Thus, Applicants respectfully submit that claims 19, 22, 44, 47, 63, and 66 should be found

allowable for at least their dependence upon claims 1, 26 and 51, and for the specific limitations recited therein.

Claims 23, 48, and 67 were rejected under 35 U.S.C. §103(a) as being unpatentable over Ramankutty, Hawkinson, and Kaiserwerth further in view of Patra and Washburn. The Office Action took the position that Ramankutty, Hawkinson and Kaiserwerth disclose all of the limitations of the claims, with the exception of removing a flow in the TCAM by freeing up a corresponding entry in the flow index space and invalidating a corresponding TCAM entry, and compacting the flows in the TCAM by moving each remaining TCAM entry up by one index. The Examiner then relies upon Patra and Washburn as allegedly curing these deficiencies in Ramankutty, Hawkinson, and Kaiserwerth. The rejection is respectfully traversed for the following reasons.

Claims 23, 48, and 67 are dependent upon claims 1, 26 and 51, respectively. As discussed above, Ramankutty, Hawkinson, Kaiserwerth, Patra and Washburn, whether viewed alone or in combination fail to disclose or suggest all of the elements of claims 1, 26 and 51. As such, Applicants submit that claims 23, 48, and 67 should be found allowable for at least their dependence upon claims 1, 26 and 51, and for the specific limitations recited therein.

The Office Action indicated that claims 8-13, 33-34, 36-41, and 56-57 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicants respectfully submit that the claims are allowable in their

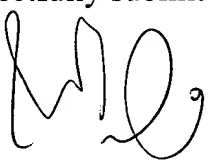
current form. Consequently, claims 8-13, 33-34, 36-41, and 56-57 have not been rewritten in independent form at this time.

Applicants respectfully submit that the cited prior art fails to disclose or suggest critical and important elements of the claimed invention. These distinctions are more than sufficient to render the claimed invention unanticipated and unobvious. It is therefore respectfully requested that all of claims 1-67 be allowed, and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



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